

**INFORMATION SYSTEMS PLANNING REPORT
BANKING AND FINANCE SECTOR**

NOVEMBER 1986







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BANKING AND FINANCE SECTOR

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INFORMATION SYSTMES PLANNING REPORT
BANKING AND FINANCE SECTOR

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I MAJOR ISSUES

A. DRIVING FORCES

- The changing regulations of federal and state governments in the banking and finance sector are dramatically affecting this sector's competitive environment.
 - The barriers to interstate banking are crumbling. Loopholes in the current laws are reducing the number of single unit regional banks.
 - Money center banks are establishing regional offices that technically are not banks. They either are loan offices or purely depositories.
 - To counter the encroachment by the money center banks, regional banks are forming interstate holding companies that typically consolidate operations and information systems organizations.
 - New technology, primarily in the form of intelligent network (ATMs) and ancillary services, has provided new expanded distribution channels for banking and financial services. This has also provided the opportunity for nontraditional competitors such as retail organizations to enter the financial services industry. The primary vehicles for entry are the POS and intelligent networks.



- Deregulation and consolidation have created another driving force-- new economies of scale. Money center banks must remain sufficiently large to economically provide a full range of services to commercial and individual customers. These new economies of scale include:
 - . Very large capital bases.
 - . Extensive branch office network links to national ATM networks.
 - . Integrated information networks.
 - . Nationwide, even worldwide, "market presence."
 - . Up-to-the-minute information on worldwide investment and currency markets.
- Large banks and other financial institutions will have to embrace two key consumer marketing tools--"share of mind" and "market presence"--in order to be successful. Simply stated, a financial institution's ability to market will be as good as its customer and demographic data base.
- Banks are likewise expanding services to include insurance and are leveraging their investment in networks and support software. As one of the respondents to the annual survey stated, "Banks are in the financial information business." This volatile sector is experiencing an extreme shakeout and consolidation by participants. This shakeout is affecting all sizes of institutions. The survivors will be the institutions that can leverage technology to provide product differentiation. Banking and finance sectors must change from a staid, highly regulated environment to one of wide open competition, similar to the retail



sector, yet maintain prudence and the confidence of their customers. Currently, too many are not successful, and public confidence in banking is at its lowest since the Great Depression. Exhibit I-1 summarizes the major driving forces affecting the banking and finance sector.

B. ISSUES AND OBJECTIVES

- Software is becoming obsolete faster due to competition and deregulation. There is a need for shorter development cycles and more flexible software.
 - Bank services are proliferating so fast that most systems development efforts cannot keep pace.
 - Many bank systems are over ten years old and do not account for the need for customer- versus function-oriented databases.
- The advent of ATMs and the interbank EFT systems has made communications one of the key areas of change affecting this sector's IS departments.
 - The growing demand for electronic information delivery is also affecting the internal organization.
 - Customers having multiple accounts and numerous services are becoming more common.
 - The increased competition from within and outside the sector requires timely account information to be delivered throughout the organization.



EXHIBIT I-1

**BANKING AND FINANCE
DRIVING FORCES**

- **Deregulation**
- **New Applied Technology**
- **Nontraditional Competitors**
- **Consolidation**
- **Changing Economies of Scale**



- Major banks are planning to develop information architectures that are customer-oriented.
 - Systems development has been on an application (i.e., product) basis. Because of this structure, banks have a difficult time associating a customer with the services the banks perform. Banks are also having difficulty developing prospects for services from their current customer base.
 - Developing this architecture is a major undertaking. The key will be creating a network of information from compatible data bases. This task will involve restructuring most systems in the organization. Those institutions that are undertaking this task are planning for up to five years to achieve their goal, with expenditures that may exceed \$1 billion.
 - The need for this new acceptance is amplified by the growing use of ATMs. Max Hopper, former Executive Vice President of Bank of America, estimates that the ATM environment will drive the transaction volume in major banks to 1,000 per second by 1990.
- Deregulation and the eroding barriers of interstate banking are accelerating the rate of bank mergers and acquisitions. This leads to consolidation of IS departments into information service companies in multibank holding companies.
- Systems compatibility becomes a major issue. As different banks begin using a single source for information services, the migration to a compatible system becomes paramount if the efficiencies inherent in this consolidation are to be realized.



- Most consolidations are only occurring at the data center. Systems development and maintenance still remain in the individual banks. Ultimately, the respondents that are consolidating are planning to consolidate the systems development group also, but this is a longer term and more complex goal.
- As more information is stored and processed, the need for internal and external data security increases dramatically. Consumer protection laws provide strong incentive for financial institutions to control the dissemination of financial information.
- Even though the banking and finance sector is experiencing the most technological opportunity (and disruption) of any sector, the top IS objective is still cost containment.
 - Increased competitive pressures have translated into cost containment strategies for administrative systems.
 - Until recently, bank profitability has been under severe pressure due to poor loan performance. Management is trying to reduce costs to keep its equity position high enough to prevent regulatory intervention.
- Banking management is in a dilemma regarding information systems.
 - It must invest heavily in new systems and technologies to meet the competitive threat of other financial institutions, insurance companies, and nontraditional competitors such as retailers.
 - Yet poor loan performance means that costs must be controlled to maintain acceptable profitability.
 - The financial institutions that can overcome this dilemma can reap the rich potential that the electronic banking age will hold.

My dear Mr. [Name],

I have just received your letter of the 10th inst.

and am glad to hear from you.

I am well and hope this finds you the same.

I have not yet had time to write you more fully.

I am, however, very much interested in the work you are doing.

I am, Sir, very respectfully,
Your obedient servant,
[Name]

Enclosed are the [Number] [Type of Document] you requested.

I am, Sir, very respectfully,
Your obedient servant,
[Name]

- "Account control" has become a key banking and financial services issue. The proliferation of computer software and turnkey systems must be directed toward one goal. To gain maximum leverage of marketing efforts, financial organizations must keep the customers they worked so hard to sign. MIS will work closer with senior management to implement and analyze necessary account information and find the appropriate products or services for the organization's customer base. Information in the financial services business can no longer be seen as a competitive advantage; it is a necessity.
- Deregulation has indirectly led to a growing application backlog. While all applications may not be of equal importance, the sheer number of unmet application requests must be reduced. Shorter software development cycles are made possible through the use of fourth generation languages.
- Exhibits I-2 and I-3 summarize the top issues and objectives in priority order for this sector.

C. MANAGEMENT PERCEPTION AND ORGANIZATIONAL ISSUES

- Most of the respondents believe their management views IS as a corporate asset. However, the middle management in this sector still views IS as an unavoidable cost.
 - This is due to senior management's strategic view. They see IS as a key competitive tool and a major component of new services.
 - Middle management still sees IS as an expense that they cannot control. Most areas have not realized increased revenue from IS-based services. Until this occurs, the middle manager's attitudes will not change.



EXHIBIT I-2

**BANKING AND FINANCE
ISSUES**

- **Software Obsolescence**
- **Growing Demand for Electronic Information Delivery Systems**
- **Need for an Integrated Information Architecture - Shift from Functional to Customer Orientation**
- **New Services Are Being Developed Faster Than IS Can Provide Support**
- **Mergers and Acquisition Activity Is Requiring Consolidation of Data Center, Software, and Staff within the Affected Institutions**
- **Growing Importance of Computer System Security**



EXHIBIT I-3

**BANKING AND FINANCE
OBJECTIVES**

- **Cost Containment**
- **Improve Information Delivery within the Company**
- **Shorten Software Development Cycle**
- **Respond to Regulatory Requirements**



- IS measurements to management have centered on two major factors.
 - Cost. Meeting budget constraints and having spending levels comparable with key competitors.
 - Return on investment and cost benefit analysis. Although these analytical approaches have been widely used, more emphasis is now being placed on revenue producing versus cost reduction tasks. The use of post-implementation analysis is still rare. It appears that once a project is approved, it will be implemented and remain in operation until someone can convince management it should be replaced. This must change--the post-implementation analysis is vital to the success of the project and the profitability of new services.
 - Some institutions view IS as essential to their success, so essential that no measurement of success is required. This is a two-edged sword.
 - It minimizes IS department efforts to prove its worth to the organization.
 - It may reduce the benefit of IS to the organization. Management may perceive a value from IS that is less than its true potential. It is IS' responsibility to sell itself to management. Even if management does not require it, IS must initiate a sales campaign of its own.
- IS' status has increased in the last two years in responding institutions. The head of IS reports to the president, vice chairperson, or executive vice president level. They are moving away from reporting to the financial segment of the organization and are being viewed as an operating and, in some cases, a profit center of the organization.



- IS is becoming an equal participant in the strategic planning process. In the next two years, IS will assume an increasing role in product development. Most of the respondents said their major role in this period will be to improve information delivery, with the head of IS becoming the chief information officer.
- The respondents believe information systems can become a competitive weapon in this sector by:
 - Reaching customers by electronic delivery of information.
 - ATM.
 - Home banking.
 - EFT (electronic funds transfer).
 - Developing flexible systems that improve the institution's ability to react to outside influences (e.g., competition and deregulation).

D. IMPACT OF TECHNOLOGY

- End-user computing is having a moderate impact on this sector. Most respondents were marshalling resources to support personal computers, not end-user computing in general. They see their role as satisfying users' immediate needs and not anticipating future requirements.
- Departmental processing is viewed as having a low impact in this section. Ultimately, departmental processors will be part of an office automation strategy, but the current centralized focus of developing a central systems architecture is deferring any action in this area.

the same time, the fact that the two countries have been able to maintain a relatively stable relationship in the face of these challenges is a testament to the strength of their diplomatic ties.

One of the key factors in this success has been the commitment of both governments to dialogue and negotiation. By engaging in regular talks and discussions, they have been able to address their differences in a peaceful and constructive manner.

Furthermore, the two countries have also worked closely together on a range of international issues, including human rights, environmental protection, and economic development. This cooperation has helped to build trust and understanding between the two nations.

In conclusion, the relationship between the two countries is a model of successful diplomacy. It shows that even in the face of significant challenges, it is possible to maintain a stable and productive relationship through dialogue and cooperation.

The success of this relationship is a testament to the power of diplomacy and the importance of maintaining open lines of communication between nations.

As the world continues to face new challenges, it is essential that we learn from the example of these two countries and strive to build similar relationships of peace and cooperation.

Only through such efforts can we hope to create a more peaceful and prosperous world for all.

The relationship between the two countries is a shining example of what is possible when nations choose dialogue over conflict and cooperation over competition.

It is a testament to the power of human ingenuity and the potential for peace and progress.

As we move forward, let us all strive to emulate the example of these two countries and work towards a more just and equitable world.

Only then can we truly achieve the goal of lasting peace and prosperity for all.

The relationship between the two countries is a source of inspiration and hope for all who seek to build a better world.

It is a reminder that even in the darkest of times, there is always a path forward if we only have the courage to take it.

Let us all strive to follow the example of these two countries and work towards a more peaceful and prosperous future.

Only through such efforts can we truly achieve the goal of lasting peace and prosperity for all.

The relationship between the two countries is a shining example of what is possible when nations choose dialogue over conflict and cooperation over competition.

It is a testament to the power of human ingenuity and the potential for peace and progress.

- Connectivity is moving rapidly toward great importance in this sector due to system integration needs of users. Diverse hardware and software need to be integrated to gain maximum use of installed equipment and to facilitate the exchange of information and ideas in the organization.
- Relational data bases on mainframes have had little activity other than study and some pilot programs.
- Voice and data integration is believed to have medium impact on this sector. Electronic information delivery is vital to the success of banks and financial institutions. The cost of networks is a key concern, and respondents believe that merging voice and data networks is a means of reducing costs; however, recent trends indicate limited implementation.
- LANs have had limited use in this sector. The lack of LAN standards has also delayed extensive use of this media.
- Exhibit I-4 summarizes the impact of the above technologies on the banking and finance sector.
- In 1986, banking and finance users' interests centered on the means to integrate existing data and the potential pitfalls of integration. Control of data, data integrity, and data security are of more concern to IS directors. According to Exhibit I-5, fourth generation languages (application development tools), which fell out of favor two years ago, are now back in favor and are seen as a key means of reducing the application backlog.
- The information center (IC) has been the focal point for end-user training as the responsibilities of the IC have been expanded to include microcomputer support and most end-user training. Some of the respondents have begun using computer-based training as part of their training program, but most respondents are limiting microcomputer training to classroom training of selected software packages.



EXHIBIT I-4

**BANKING AND FINANCE
IMPACT OF TECHNOLOGY**

	IMPACT	COMMENTS
End-User Computing	Medium	Most using IC for support. See as future force, but now in control phase.
Departmental Processing	Low	Unsure of application other than OA.
Connectivity	High	Connectivity required for maximum MIS efficiency.
Relational Data Bases	Low	Most studying the issue, very little implementation activity.
Voice/Data Integration	Medium	While viewed as important, connectivity outranks voice/data integration needs.
LANs	Low	Low usage, lack of LAN standards have inhibited corporate commitment.



EXHIBIT I-5

**BANKING AND FINANCE
AREAS OF NEW TECHNOLOGY INTEREST**

- **Connectivity**
 - **Wide Area Networks**
 - **Medium Area Networks**
 - **Control of Shared Data**
- **End-User Computing**
 - **Interaction with Corporate Data Base through Microcomputers**
 - **Data Integrity**
 - **Data Security**
 - **Utilization of Fourth and Fifth Generation Languages**



II NEW APPLICATIONS

- The most important new applications involve integration of fundamental banking applications—deposit systems, trust management, and loan application processing.
 - The changing economics of delivery services are rendering fundamental systems obsolete. Many of these systems are over 20 years old. They have been heavily modified and do not interface with other systems.
 - The move toward developing a central architecture requires that these core systems conform to this central structure. Typically, these systems would be the first to be designed since they make up the foundation of the banking business.
 - Continuing consolidation of multiple bank IS departments under a single holding company division is creating a need for either a single system or compatible systems that can service all banks within the holding company.
- Information delivery within the organization is creating a high demand for query and customer information systems. External delivery of information is being driven through the ATM/POS networks. These networks are providing a vehicle for customer information and services that can provide a competitive advantage to financial institutions.



- Fifty-five percent of the major new systems are being developed by internal staff, 23% are developed externally via packages and contract personnel, and 22% are developed by both internal and external resources. The return to internal from external resources is caused by the rapidly changing competitive and regulatory environment and banks' views of information as an operational necessity.
- Exhibits II-1, II-2, and II-3 summarize the major applications activity in the banking and finance sector. Note that new application development activities now represent more than 60% of typical software staffing.



EXHIBIT II-1

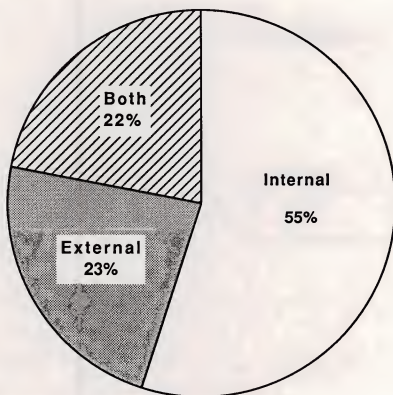
**BANKING AND FINANCE
NEW APPLICATIONS, 1986**




- **Trust Management**
- **Integrated Deposit System**
- **Converting Central Files to Data Base
Management System**
- **Electronic Banking**
- **ATM/POS**



EXHIBIT II-2

**BANKING AND FINANCE
SOURCE OF DEVELOPMENT FOR NEW MAJOR APPLICATIONS**



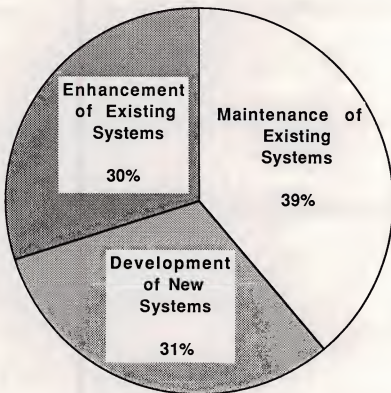
-  **External Sources**
-  **Internal Sources**
-  **Combination of Internal and External Sources**

Cost Range of New Application Software: \$15,000 - \$8,000,000



EXHIBIT II-3

**BANKING AND FINANCE
ASSIGNMENT OF APPLICATION DEVELOPMENT STAFF**



Percent of Application Development Staff





III BUDGET ANALYSIS

- Exhibit III-1 shows the 1986 budget distribution and the projected growth of budget categories in 1987. Expenditures for "other hardware" is the only budget category projected to decrease.
- Microcomputers is the largest projected growth category at 14.1% in 1987.
- Personnel expenses continue to grow and account for nearly 40% of total IS budgets.
- Fifty-four percent of the respondents in the banking sector said their 1987 budgets will decrease following installation of new computer systems or upgrades completed in 1986. Of those reporting increased 1987 budgets, 64% reported that increases for 1987 will be at a lesser rate than from 1985-1986 (see Exhibit III-2).
- Once again, personnel expense leads the list of reasons for increased 1986 IS budgets, followed by hardware and software purchases. New contributing factors (facility expansion, disaster recovery services, and supplies expense) validate a trend toward increasing importance of areas outside traditional hardware and software purchases (see Exhibit III-3).
- Exhibit III-4 reveals that the "traditional" areas of personnel expense and new hardware purchases will propel expected 1987 MIS budget increases. Interestingly, facility expansion expenses will continue to play a greater role in IS



EXHIBIT III-1

1986 BUDGET DISTRIBUTION AND
1986/1987 CHANGES IN THE BANKING AND FINANCE SECTOR

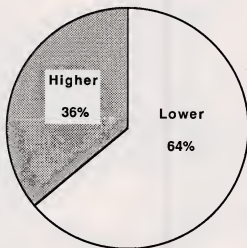
BUDGET CATEGORY	1986 PERCENT OF I.S. BUDGET	1986-1987 EXPECTED BUDGET GROWTH
Personnel Salaries and Fringes	39.9%	3.7%
Mainframe Processors	8.1%	6.9%
Minicomputers	1.2%	3.4%
Microcomputers	4.9%	14.1%
Mass Storage Devices	5.3%	7.5%
Other Hardware	6.9%	(3.7%)
Total Hardware	26.4%	1.4%
Data Communications	10.1%	8.3%
External Software	2.8%	4.9%
Professional Services	1.7%	1.4%
Turnkey Systems	0.8%	0.3%
Software Maintenance	0.8%	6.6%
Hardware Maintenance	8.4%	3.1%
Outside Processing Services	1.0%	1.4%
Other	8.1%	1.8%
Total	100.0%	2.6%



EXHIBIT III-2

BANKING AND FINANCE
MOST 1987 I.S. BUDGETS WILL DECREASE COMPARED TO 1986

**Percentage Growth in
1987 Budget vs. 1986
(Of Those Respondents Indicating
a Budget Increase)**



1987 Budget vs. 1986

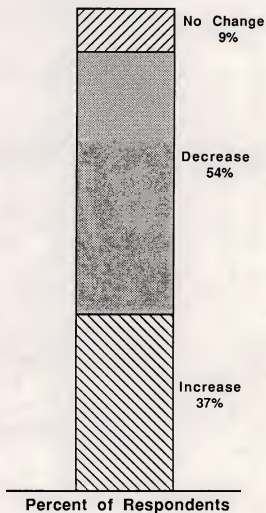




EXHIBIT III-3

**BANKING AND FINANCE
FACTORS CONTRIBUTING TO INCREASED 1986 I.S. BUDGETS
(In Order of Frequency of Mentions)**

- **Personnel Expense**
- **Hardware Purchases**
- **Software Purchases**
- **Hardware Maintenance**
- **Facility Expansion/Enhancement**
- **Disaster Recovery Services**
- **Supplies Expense**



EXHIBIT III-4

**BANKING AND FINANCE
FACTORS CONTRIBUTING TO INCREASING 1987 I.S. BUDGETS
(In Order of Frequency of Mentions)**

- **Personnel Expense**
- **Hardware Purchases**
- **Facility Expansion**
- **Hardware Maintenance**
- **Communications Costs**



budgets. INPUT believes users' increased disk storage and data communications requirements now exceed available floor space, and financial institutions which have delayed facility expansion for two to three years must now make those expenditures.

